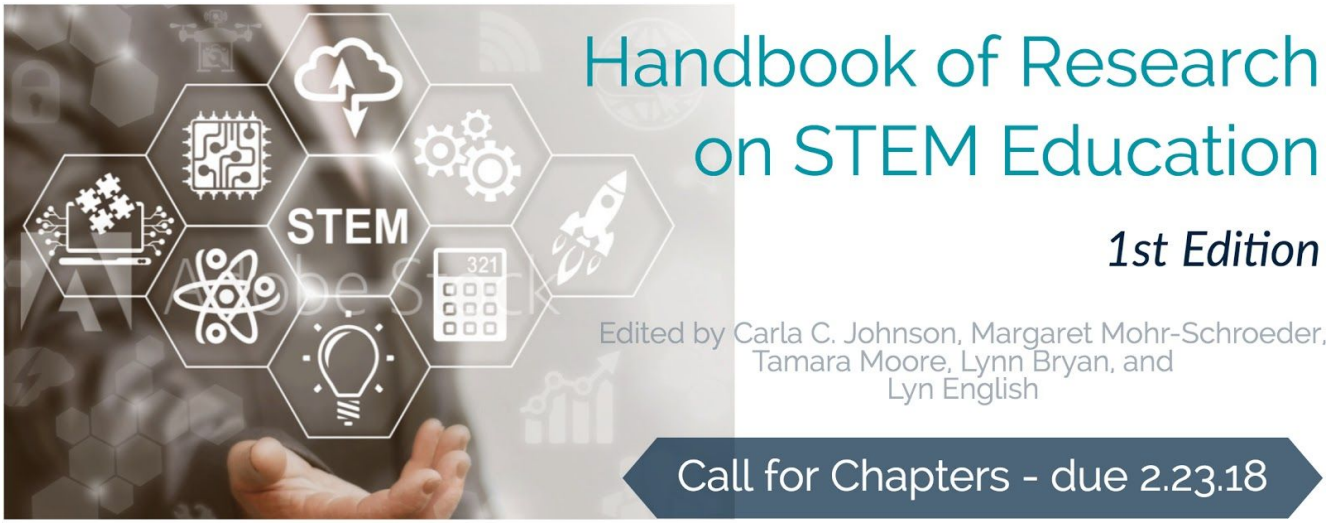

Globally, there has been a shift in education to emphasize STEM (science, technology, engineering, and mathematics) education as a means to better prepare K-12 students for for global citizenship as well as college success and/or entering the workforce with the knowledge and skills to be successful. Research on STEM *integration* (involving more than one of the disciplines) is expanding and the *Handbook of Research on STEM Education* aims to synthesize, through an international lens, time-honored and contemporary research on the integration of one or more of the STEM disciplines within a curricular, instructional, structural, or other educational programming format, culminating in a bold vision for the future of STEM education. In other words, research in this handbook should not focus on a single discipline in isolation. We are seeking to include research on issues related to, for example, STEM focused schools, integrated STEM curriculum and instruction, STEM out-of-school learning experiences (see suggestions below).

The editors have partnered with Routledge/Taylor & Francis to publish the *Handbook of Research on STEM Education* – slated for publication in 2019. We are currently seeking chapter proposals to be considered for inclusion in the handbook. We are interested in chapters about the topics below, as well as your ideas for other potential chapters that may not be in the initial outline for the handbook. Authors may consider working in writing groups that are interdisciplinary, with expertise encompassing more than one of the STEM disciplines and/or countries of origin.

Interested contributors should develop a proposal that will include the following information:

- Chapter title and section: Draft title of the proposed chapter; indicate within which handbook section the chapter will fit (see list below) or propose a new handbook section
- Author information: Full list of authors, affiliations, positions, contact information
- Author expertise: Expertise each author brings to the handbook and/or chapter (limited to 200 words per author)
- Summary of chapter: Two sentence summary of the chapter that will be submitted to the publisher if the chapter is selected for the handbook
- Chapter abstract: Rationale and description of the chapter content; no longer than 500 words, single-spaced.

Chapter abstracts must be submitted no later than Friday, February 23, 2018 to https://www.surveymonkey.com/r/STEMHandbook All abstracts will be peer-reviewed and decisions will be shared with submitting authors no later than May 15, 2018. The anticipated timeline for submission of full chapter drafts in the handbook is November 15, 2018. The length of chapters that will be included in the handbook should not exceed 10,000 words. Estimated publication of the handbook is 2019. For questions, please contact carlacjohnson@purdue.edu

Working Draft of Handbook Outline

Section 1: Nature of STEM
Section 2: STEM Teaching and Learning in preK-20
Section 3: STEM Curriculum and Assessment
Section 4: Critical Issues in STEM
Section 5: STEM Teacher Education
Section 6: STEM Policy and Reform

Potential topics for chapters may include:

- Design thinking in STEM
- Engineering-design based STEM integration
- History of STEM curricular approaches
- Issues of (in)equity in STEM education
- Learning technologies in STEM
- Linguistic and cultural considerations for STEM
- Modeling in STEM education
- Out-of-school STEM
- Partnerships in STEM Education
- Research methods in STEM education
- Socioeconomic and geographical contexts for STEM
- STEM assessment
- STEM curriculum development
- STEM identity, attitudes, aspirations
- STEM in other disciplines
- STEM in mathematics classroom
- STEM in science classroom
- STEM in technology education
- STEM pedagogy
- STEM Policy and Reform
- STEM school models
- STEM teacher attitudes and beliefs
- STEM teacher education models
- STEM teacher leadership
- STEM teacher professional development
- STEM teacher recruitment and retention
- Theoretical frameworks for STEM education research